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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|-----------------|-------------|----------------------|----------------------|------------------|
| 10/669,184      | 09/22/2003  | Steve Lemke          | PALM-3284 . SG . DIV | 4084             |

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11/18/2005

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EXAMINER

CHEN, ALAN S

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                              |  |
|------------------------------|-------------------------------|------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/669,184 | Applicant(s)<br>LEMKE ET AL. |  |
|                              | Examiner<br>Alan S. Chen      | Art Unit<br>2182             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 21-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's amendment to the title has been acknowledged and entered.
2. Applicant's amendment to the claims rectified the antecedent basis problem indicated in the 35 U.S.C. §112 rejection disclosed in the previous office action, and hence the rejection is withdrawn.
3. Applicant's arguments regarding the prior art rejection filed 08/30/2005 have been fully considered but they are not persuasive. Examiner's response is detailed below.
4. The indicated allowability of claims 22 and 29 are withdrawn in view of the newly discovered embodiment in the Jones et al. (Jones) reference. The rejection of the aforementioned dependent claims is given in this office action.
5. Upon further review of the reference to Jones et al. (Jones), it was determined previously objected claims 22 and 29 are actually anticipated by Jones and thus the

### **Issue 1**

6. Applicant contends that both the 35 U.S.C. §102 and §103 rejection using the Jones et al. (Jones) reference is a singular event handler that handles events from multiple different peripheral devices, thus does not qualify as the claimed "device-specific notification handler", since Jones is not device-specific.

### **Examiner's Response to Issue 1**

7. Examiner does not agree with applicants contentions because the assertions applicant makes in his arguments regarding "device-specific notification handler" is simply not what is claimed. Nowhere in the claim language requires the notification handler to have a one-to-one

only correspondence with the peripheral device that generated in the interrupt. In other words, the applicant appears to be arguing there must be only one dedicated device-handler for each peripheral device that generates an interrupt (pg. 10, center paragraph). This is simply not what is claimed, where the Examiner has interpreted the broad independent claims 21 and 28 to only require the notification handler servicing an interrupt sent by a device with the knowledge of who, e.g., what device sent the interrupt, and handling the interrupt based on who sent the interrupt. This is opposed to a generic notification handler who is not “device-specific” where all the device interrupts are treated without knowledge of who sent the interrupt and in essence, handled in a first come first serve basis. Applicant’s own specification does not require what the applicant appears to be arguing, e.g., the specification does not require a dedicated interrupt handler per each peripheral device. Page 31, lines 5-15 discloses an embodiment of the application where the peripheral devices will be identified via peripheral IDs in a data string, such that the notification handlers actually identifies the device based on these data strings, thus the notification handlers being “device-specific”. Turning to the reference to Jones, Column 6, lines 5-15 disclose the event packet, e.g., one that is generated by each peripheral device at the event assembler, element 8, where the event packet contains a source/device identifier that identifies each device that sent the interrupt. The CPU has the event handler (element 15) that receives these interrupt requests by the device and subsequently uses the source/device identifier (in conjunction with priority values sent with the event packet from the peripheral device) to determine the appropriate interrupt service routine (Column 8, lines 37-44) to execute. Thus, the event handler (e.g., high priority device-specific notification handler) is indeed “device-specific” such that it handles each device based on its identification, as well as based on priority.

Examiner also points out Jones disclosing that there can be a plurality of event handlers, thus a plurality of device-specific/system notification handlers (Column 4, lines 1-5). Clearly, in the case where Jones has multiple notification handlers, one must have priority over another in handling an interrupt request from a peripheral device, otherwise, request contention between notification handlers would occur.

**Issue 2**

8. Applicant argues the secondary reference to Culbert does not describe or suggest a high priority device-specific notification handler where Culbert has multiple interrupts handled by a bank of registers, thus not having dedicated interrupt handlers for each device.

**Examiner's Response to Issue 2**

9. The applicant's contention is still based on the premise that a central interrupt notification handler cannot be "device-specific". However, as the Examiner argued in Issue 1, it is clearly possible for the notification handler to be "device-specific" when the peripheral device sends its identification and the notification handler determines how to handle the interrupt by that particular identification. The reference to Culbert is simply an analogous situation where the architecture of the PDA computer system is similar to the one disclosed by Jones except in the PDA form factor, as well as Culbert's ability to handle interrupts from multiple devices using a priority scheme. Thus, Jones invention is applicable to Culberts.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2182

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 21-25 and 28-32 are rejected under 35 U.S.C. 102(e) as being anticipated by

Jones.

12. As per claims 21 and 28, Jones discloses a method and computer system for identifying a peripheral device (Fig. 2, ports indicated are communication to external ports) detachably coupled to a computer system (Fig. 1, element 2 is by definition of "peripheral" devices that is well known to one of ordinary skill in the art, detachable), said method comprising receiving an interrupt from said peripheral device (Column 4, lines 5-15), said peripheral device being coupled to a communications port of said computer system responsive to said interrupt (Fig. 2, element 8 is port that couples to peripheral device, connection shown in Fig. 1), posting an interrupt notification message (Column 4, lines 45-50, the peripheral device generates an event packet; packet shown in Fig. 6) to alert a high priority device-specific notification handler (Fig. 1, element 15, shown in detail in Fig. 8), said high priority device-specific notification handler having a higher priority than a system interrupt notification handler (Column 4, lines 1-5, other interrupt handlers exist on other devices, thus priority in handling the interrupt is inherently given to the handler that the event packet is sent to) and being capable of directly servicing an interrupt from said peripheral device (Column 6, lines 5+ and Column 8, lines 35-45, disclose interrupt request sent by event packet has identification such that the event handler, element 15 handles the interrupt request after knowing the device identification and priority is assigned in the message/packet generated, partially based on the device identification; peripheral is capable of generating various priority levels as indicated in Table II, EN.PRIORITY) without involving a

system interrupt notification handler (priority levels, e.g., those shown in Table II, is generated by the peripheral device and given to a specific interrupt handler, the priority levels only pertaining to the specific event handler where interrupt request is sent; the other notification handler, e.g., disclosed in Column 4, lines 1-5 are not involved since they did not receive the interrupt request), servicing said interrupt notification message upon receipt thereof (Column 8, lines 35-45).

13. As per claims 22 and 29, Jones discloses claims 21 and 28, respectively, wherein said computer system has a plurality of said high priority device-specific notification handlers installed thereon (Column 4, lines 1-5, "...other modules which are equipped with event handlers").

14. As per claims 23 and 30, Jones discloses claims 21 and 28, respectively, wherein said processor is operable to trigger a default action in the event that said high priority device-specific notification handler fails to handle said interrupt notification message (Column 9, lines 20-30 describe trap instructions causing the event handler to restore back to its original state).

15. As per claims 24-25 and 31-32, Jones discloses claims 21 and 28, respectively, wherein said communication ports are serial such as RS-232 (Fig. 2, PIO and TDR general ports which intrinsically can be part of the well known serial communication ports, e.g., RS-232 is a standard computer port around the time of Jones invention, being phased out by another serial protocol USB).

#### *Claim Rejections - 35 USC § 103*

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 26-27 and 33-34 are rejected under 35 USC 103(a) as being unpatentable over Jones in view of Culbert.

18. As per claims 26 and 33, Jones discloses claims 21 and 28.

Jones does not disclose expressly the method and computer system pertaining to a PDA.

Culbert discloses interrupt priority management applied to PDAs, where the CPU handles the interrupt. Culbert also discloses the architecture of the PDA having display port, Fig. 1, element 124, an input/output port, Fig. 1, element 122.

Jones and Culbert are analogous art because they are from the same field of endeavor in computer system architecture.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to implement Jones computer system as a PDA.

The suggestion/motivation for doing so would have been the similarity and purpose of the PDA invention of Culbert clearly lends itself to Jones. Furthermore, form factor of computer systems is clearly obvious, where a PDA is a scaled/simplified version of a desktop system.

Therefore, it would have been obvious to combine Jones with Culbert for the benefit of miniaturizing the a computer system to a PDA level for convenience to the user.

19. As per claims 27 and 34, Jones combined with Culbert discloses claims 26 and 33, respectively, wherein Jones further discloses sensing pins of the communication port to determine voltage levels (Column 4, lines 45-55).



*Conclusion*

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

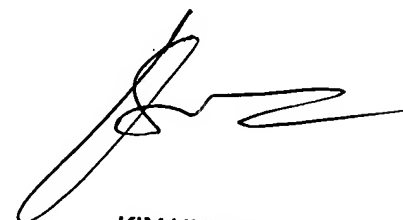
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASC  
11/11/2005



KIM HUYNH  
PRIMARY EXAMINER

11/14/05